

DIAGNOSIS AND MANAGEMENT OF COVID-19 INFECTION IN CHILDREN



QUICK REFERENCE GUIDE

Sri Lanka College of Paediatricians, in collaboration with Family Health Bureau and
World Health Organisation (WHO) - Sri Lanka



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01 INTRODUCTION:

COVID-19 is a global pandemic affecting almost all the countries in the world. Sri Lanka at present is witnessing a raging third wave of the pandemic, with an exponential rise in cases. Coronavirus disease, caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), is usually mild or moderate among children. However, severe disease and even mortality are reported in children as well. Children with co-morbidities and infants have shown a higher tendency to develop complications. In addition, a specific disease condition called Multisystem Inflammatory Syndrome in Children (MIS-C), which is exclusively present in children, also adds to the morbidity and mortality in children.

New knowledge on the management of patients with COVID-19 is ever-evolving. In line with the changing dynamics of the pandemic and profile of the affected children, the knowledge regarding the COVID-19 disease spectrum among children, complications, and management modalities among pediatricians of Sri Lanka is limited. It is essential to refine children's care pathways with Covid19 with the addition of novel management options.

This document is prepared by the Sri Lanka College of Paediatricians, Family Health Bureau, and the WHO-Sri Lanka and intends to provide the latest management strategies for clinicians caring for children with or suspected COVID-19 infection.

02 COVID-19 IN CHILDREN:

2.1 Incidence

Compared to adults, the number of cases and proportion of severe COVID-19 disease among children is significantly low. In most instances, the proportion of childhood cases are approximately 10% or less of all COVID-19 positive patients. However, with the acute surge of the total number of cases, the number of reported cases among children has risen. Therefore, a high possibility of children with severe disease is also expected, along with the increased number.

Following hypotheses have been proposed on why children are less susceptible to acquire COVID-19 infection or develop severe disease compared to adults.

- Differences in the number and the distribution of ACE2 receptors and their affinity to SARS CoV-2
- Differences in the endothelium and clotting function (make children less susceptible to developing endothelial damage, activation of coagulation pathways, and formation of microthrombi).
- The presence of more cross-reactive and neutralizing antibodies after infections with other coronaviruses in children. In contrast, adults have more non-neutralizing antibodies that lead to antibody-dependent enhancement.

- Strong and protective innate immune response in children compared to immunosenescence and dysfunctional or over-active innate immune response in adults.
- Differences in the microbiota (oropharyngeal, nasopharyngeal, lung, and gastrointestinal)
- Higher levels of melatonin which has anti-inflammatory and anti-oxidative properties
- Lower prevalence of comorbidities that leads to severe disease
- Less intense exposure to SARS-CoV-2 in children due to less social mobilization.

2.2 Modes of transmission:

- Droplet transmission
- Contact transmission
- Airborne transmission: Consistent and robust evidence is emerging about the possibility of SARS-CoV-2 spreads by airborne transmission. This is particularly important in accelerating transmission within closed spaces with poor ventilation, but it does not mean that the virus can spread long distances through the air.

2.3 Incubation period:

Data on the exact incubation period in children is limited. Generally, the median incubation period is five days but may extend up to 14 days. Usually, children develop symptoms 2-10 days after exposure.

03 CLINICAL FEATURES AND SEVERITY

3.1 Phenotypes of covid-19 in children

Pre-symptomatic period:

The time between exposure to the virus and the development of symptoms. The child may be infectious during the pre-symptomatic period, especially two days before the onset of symptoms.

Asymptomatic children:

It includes children who are confirmed positive without any clinical features. These children are identified during contact tracing or as part of routine testing for hospitalization for other unrelated reasons. However, asymptomatic children also could be infectious.



Classic manifestations:

Symptoms are mainly related to the respiratory system (cough, cold, sore throat, shortness of breath, rhinorrhea, loss of smell) with or without fever. In addition, they may have fatigue and myalgia. Loss of taste is less frequent.



Atypical manifestations:

Gastrointestinal symptoms - diarrhea, nausea, vomiting, and abdominal pain are reported in a small proportion of cases. In 5-10% of children these manifestations would be the only presentation without respiratory symptoms.

Cutaneous manifestations - maculopapular, urticarial or vesicular eruptions, transient livedo reticularis, COVID toes (reddish-purple inflammatory nodules on the feet and toes, sometimes in hands and fingers). These features are mostly related to Multisystem inflammatory syndrome in children (MIS-C).

3.2 Severity of covid-19 infection in children

Mild Disease:

Fever, sore throat, rhinorrhea, cough, or mild gastrointestinal symptoms such as vomiting and diarrhea **WITHOUT** tachypnoea, respiratory difficulty, or other features of pneumonia.

Moderate disease:

Presence of features of pneumonia (fever, cough, crepitations, etc.) with tachypnoea. (Tachypnoea is defined according to the age group: $\geq 60/\text{min}$ for <2 months, $\geq 50/\text{min}$ for 2-12 months, $\geq 40/\text{min}$ for 1-5 years, $\geq 30/\text{min}$ for >5 years).

- **BUT** does not have features of severe pneumonia (see below)
- While the diagnosis can be made on clinical grounds chest imaging (CXR, USS) may help to identify pulmonary involvement.

Severe disease:

Severe pneumonia is considered when **any of the following features** are present (without features of critical disease)

- SpO₂ $<90\%$ in room air (the trend of dropping SpO₂ in an individual is important rather than this single cutoff value).
- Grunting, severe chest retractions, or other evidence of increased respiratory efforts.
- Lethargy, somnolence, Seizures
- Cyanosis

While the diagnosis can be made on clinical grounds chest imaging (CXR, CTS, USS) may help to identify pulmonary involvement. In severe disease, generally, radiographic infiltrates are $> 50\%$ of the lung field with multi-lobar involvement

Critical disease:

Presence of any of the following complications in a child with severe disease

- Acute respiratory distress syndrome (ARDS)
- Circulatory shock
- Multi-organ dysfunction syndrome (MODS)
- Acute thrombosis
- Multisystem inflammatory syndrome in children (MIS-C)

04 RISK ASSESSMENT

Children with underlying medical conditions are at increased risk for severe illness than children without underlying medical conditions.

- Complex medical conditions with genetic, neurologic, or metabolic in origin
- Haemodynamically significant congenital heart diseases
- Chronic lung diseases

- Immunocompromised children (Primary immune deficiencies, solid-organ/bone marrow transplant recipients on immunosuppressive therapy, cancer patients undergoing treatment)
- Those on long-term immunosuppressants/corticosteroids for any cause
- HIV-infected children
- Obese children
- Children with diabetes mellitus
- Significant chronic ill health due to any other organ involvement, including chronic kidney or liver failure
- Children less than one year s

05 CASE DEFINITION AND DIAGNOSIS

5.1. Case definitions



Suspected Case:

A child with acute illness (at least one sign/ symptom, e.g., cough, shortness of breath with/without fever, AND having been in contact with a confirmed or probable patient with COVID-19 infection during the last 14 days,

OR

A child with an acute illness as above is a resident in an area with the high transmission or traveled to an area with high prevalence or arrived from overseas during the previous 14 days before the onset of symptoms

OR

A child with severe acute respiratory illness AND the absence of an alternative diagnosis that fully explains the clinical condition.

However, a high degree of suspicion is important as there are atypical presentations reported in children, particularly in the presence of close contacts or from an area with a high prevalence rate.

Probable Case:

A suspected case for whom RAT or RT-PCR testing for SARS CoV-2 virus is inconclusive.

OR

A suspected case for whom RAT or RT-PCR test could not be performed for any reason.

Confirmed Case:

A child with laboratory confirmation of Covid-19 infection by a positive RAT or RT-PCR irrespective of clinical signs and symptoms.

5.2 Choice of testing for a suspected case

Rapid antigen test (RAT) would be preferred as the first test in symptomatic patients. It is cheap and has a reasonable sensitivity and specificity. It correctly identifies COVID-19 in an average of 72% of people with symptoms than 58% of people without symptoms. It is most accurate when used within the first week after the onset of symptoms).

If the rapid antigen test is negative and still, there is a high index of suspicion of COVID-19, a PCR test should be performed.

A second PCR may be performed in a symptomatic child in whom the initial test was negative to confirm the diagnosis.

06 MANAGEMENT OF A CHILD WITH CONFIRMED COVID-19 INFECTION

It is emphasized that all children, despite their symptoms or COVID-19 contact status, ***should receive the maximum appropriate care*** in all instances and at any level.

Appropriate PPE (as specified by the Ministry of Health or local institution) should be used in all situations when attending a suspected child. However, if a high level of protection is necessary for certain instances such as resuscitation of a child or engaging in an aerosol-generating procedure, full PPE should be worn.

Please refer to the algorithm for caring for children suspected or confirmed with COVID-19 infection.

A caregiver should accompany the child irrespective of his/her COVID-19 status.



With the past and current experience, we understand that only a low percentage of children infected with COVID-19 develop severe disease. Hence, by a careful identification of children who could be managed remotely at home would significantly reduce the burden on the healthcare system.

Following children are identified as high risk that require institutional care

1. Children with moderate, severe, or critical COVID-19 infection
2. Children with other acute or chronic diseases who require institutional care with asymptomatic or mildly symptomatic COVID-19 infection.
3. Children with asymptomatic or mild COVID-19 but do not have proper facilities for safe home management due to various socio-economic constraints.
4. Children less than 2 years

6.1 Management of asymptomatic or mild disease

Children with mild disease should be assessed for the eligibility for home management. If not, the child should be managed in a designated area for children with COVID-19 in the admitting institution.

Following symptomatic management and supportive care are recommended as required,

- Monitor the vital parameters (heart rate, respiratory rate, oxygen saturation) three times a day or more, depending on the risks identified.
- Paracetamol 10-15mg/kg/dose for fever. Avoid NSAIDs unless indicated due to other co-morbidities.

- Adequate rest
- Adequate nutrition and hydration
- Perform full blood count and CRP
- Be vigilant about other fever syndromes, e.g., dengue fever, leptospirosis, influenza and undertake appropriate tests, if indicated
- No place for routine antibiotics
- Steroids are not indicated at this stage unless if they are currently on steroids for any other co-morbid condition, e.g., oral steroids in nephrotic syndrome or having an acute exacerbation of asthma.
- Warning signs for escalation of care: Difficulty in breathing or saturation at rest <94% in room air or decreasing trend of oxygen saturation

6.2 Management of moderate disease

Children with moderate disease can be managed in a Level II institution. However, consider transferring to a Level III institution with HDU/ICU facilities for children, early, if rapid worsening to severe disease is expected.

- Monitor every four hours or more frequently if indicated to identify the possible progression of the disease (RR, PR, BP, Respiratory effort, SpO₂, etc.)
- Supplementary oxygen, if required, to maintain SpO₂ >94%
- Paracetamol 10-15mg/kg/dose as required for fever. Avoid NSAIDs unless indicated due to other co-morbidities.
- Attend for nutrition, hydration, and other supportive care
- Antibiotics are not required routinely. If a secondary bacterial infection is suspected, arrange FBC and CRP and other relevant investigations if laboratory facilities are available. However, if strongly suspected of a secondary bacterial infection based on clinical and/or laboratory evidence, antibiotics can be commenced (Please refer National guidelines on Respiratory Infections in children)
- A chest radiograph is indicated with worsening of respiratory symptoms
- Steroids are indicated for the patients when they start requiring oxygen, worsening symptoms, or prolonged duration of symptoms without evidence of recovery (please refer to the management of severe disease) Dexamethasone 0.15mg/kg/day (maximum 6mg) once daily or in two divided doses or equivalent doses of other steroids such as prednisolone or methylprednisolone or hydrocortisone, continued for 5-14 days (decided depending on the severity and existing comorbidities). The intravenous route is preferable in critically ill children.

6.3 Management of severe and critical disease

- All patients with progressive disease should receive standard care and be managed in the COVID 19 Ward/HDU/ICU of the original health facility until escalation to a level III center with Paediatric HDU/ICU is made available
- Start Oxygen
 - Escalate as needed to HHFNC, CPAP, NIV or invasive ventilation
- Monitor vital signs and SpO₂ closely
- Investigations:
 - FBC, CRP, LFT, RFT, ABG, D-Dimer, Serum Lactate
 - ECG, CXR,
 - Echo, Troponin I, LDH, S. Ferritin if needed
 - May be repeated after 24-48 hours as per clinical condition
- Intravenous steroids
- Consider Antibiotics



- Complications: Need to monitor for possible complications such as thrombosis, pulmonary embolism (unwell patient with sudden worsening of hypoxemia, blood pressure or tachycardia), haemophagocytic-lymphohistiocytosis (HLH), and multi-organ failure
- Consider prone positioning
- Restrict fluids
- Consider LMWH with established thrombosis (e.g Enoxheparin)
- Manage Shock, ARDS, acute kidney injury, HLH, Myocarditis as per protocol
- Hydroxychloroquine, chloroquine, ivermectin, azithromycin, lopinavir/ritonavir, vitamin D, vitamin C, and zinc are not recommended for routine use in children due to lack of evidence.
(Please refer to the COVID 19 Management Guidelines of severe and critical disease by the Paediatric Intensive Care Chapter of the Sri Lanka College of Paediatricians)

6.4 Criteria for discharge:

For more details on discharge of children with COVID-19 infection, please refer to updated National guidelines of the Ministry of Health.

Discharge of children with mild COVID-19 infection who are not immunocompromised or not having comorbidities

If the child is clinically fit he/she can be discharged, if recommended by the paediatric team. If discharged early, isolation is recommended for a total of 14 days from the onset of symptoms. can be discharged after 14 days from the onset of symptoms .

Once discharged, patients should not be subjected to further PCR testing even when hospitalized for any other condition, subsequently. This recommendation is applicable for three months after the initial diagnosis.

A. Assessment of children aged 2-14 years for home-based management

Children (2-14 years) who are asymptomatic or mildly symptomatic with laboratory confirmed COVID 19 infection are assessed for HBM.

1. Assessment of eligibility of a positive child from the community for HBM will be done by the area MOH concerned. If eligible, the child will be handed over to “Patient Home Isolation and Management System” [PHIMS].
2. Assessment of eligibility of a positive child from the out-patient department/ emergency unit of a hospital, for HBM will be done by the MO-OPD or MO-ETU after liaising with the pediatric team of the respective hospital. If eligible the child will be handed over to “Patient Home Isolation and Management System” [PHIMS].

Please note: However, if resources are available monitoring of such patients via telephone can be carried out by the paediatric team of the respective hospital.

3. As per the recent Ministry of Health guidelines (circular no: DGHS/COVID-19/347/2021) the Medical Officer of Health of that area is responsible for triaging the patient to decide on HBM or institutionalized care.

In case the patient is brought to the OPD/ETU in a hospital, the paediatric team is responsible for triaging the patient to decide on HBM or institutionalized care.

4. The area MOH will register the eligible children in the “Patient Home Isolation and Management System” [PHIMS]. In case the child is brought the OPD/ETU in a hospital, an assigned medical officer will hand over the child to the PHIMS after liaising with the pediatric team.
5. The following are the eligibility criteria for home-based care
 - Children (2-14 years) with positive PCR or RAT test who are not experiencing any symptom
 - Children with positive PCR or RAT with mild symptoms (e.g., fever $\leq 38.0^{\circ}\text{C}$ or fever less than 3 days, mild cough, pharyngitis, or other upper respiratory symptoms) **WITHOUT** difficulty in breathing or tachypnea (RR $>40/\text{min}$ for 2-5 years, $>30/\text{min}$ for above 5 years) or rapidly worsening symptoms or oxygen saturation $<96\%$ in air (if a pulse oximeter is available)
 - Safe household and social circumstances
 - o Parent/care giver available all the time with the child during the home isolation period
 - o Parent/caregiver can support and monitor the child
 - o Ventilated room with adequate facilities for home isolation
 - o Adequate communication facilities
 - No other associated comorbidities identified such as chronic lung disease, uncontrolled asthma, chronic kidney or liver disease, cerebrovascular disease, obesity (BMI $> 2\text{SD}$), significant genetic/metabolic disease, diabetes mellitus, hemodynamically significant heart disease or hypertension, primary immunodeficiency, any form of acquired immunosuppression or any other significant illness

- Has obtained informed consent of the parent/guardian
6. Child will be monitored for any new developments of symptoms during the isolation period (up to 14 days from the onset of illness)
 7. Following advice should be given to the parents/ caregivers
 - To record temperature, monitor for respiratory difficulties (oxygen saturation if available), feeding difficulties, urine output, sleepiness, or lethargy.
 - Parents/caregivers are advised to call the emergency contact numbers in case of serious concerns related the child's illness e.g., 1390 (Emergency call center) or 1990 (Ambulance), or Nearest hospital number or MOH/PHI
 - Paracetamol 10-15mg/kg/dose for fever and antihistamine for nasal symptoms
 - Adequate rest, nutrition, hydration, and hygiene
 - Avoid NSAIDs, steroids and antibiotics unless advised by the medical team
 - If the child is on long-term medication, to continue those
 8. The PHIMS team/paediatric team of the respective hospital will support the following aspects related to HBM of patients (Circular no: DGHS/COVID-19/347/2021)
 - Advice the parents/caregivers (information leaflet annexed)
 - Daily monitoring over the phone
 - Provide emergency contact details
 9. The home isolated patient will be discharged on day-14 of the illness

The **guidance and the checklists for initial assessment, information leaflet and daily monitoring** are annexed. The remote assessment will be carried out via telephone as per the guided checklists.

B. Assessment of eligibility of hospitalized children less than 14 years (including below 2 years) for home-based management (HBM)

1. The decisions on HBM should be taken by the ***paediatric team*** of the hospital concerned
2. On discharge for home-based management, an assigned medical officer of the institution will hand over the patient to PHIMS or ***preferably, monitoring of such patients via telephone can be carried out by the paediatric team of the respective unit/hospital if resources are available. Many paediatric units are practicing this at present.***
3. The following are the eligibility criteria for HBM of the children who are hospitalized
 - Children who are currently asymptomatic or mildly symptomatic and **clinically stable**
 - Fever free without any red flag signs, feeding and activity are satisfactory
 - No difficulty in breathing or tachypnea or rapidly worsening symptoms
 - Oxygen saturation $\geq 96\%$ in air
 - Safe household and social circumstances
 - o Parent/care giver available all the time with the child during the isolation period
 - o Parent/caregiver can support and monitor the child
 - o Ventilated room with adequate facilities for home isolation
 - o Adequate communication facilities
 - Even if the child has a comorbid condition but clinically stable and **paediatric team** recommends home management
 - Has obtained informed consent of the parent/guardian

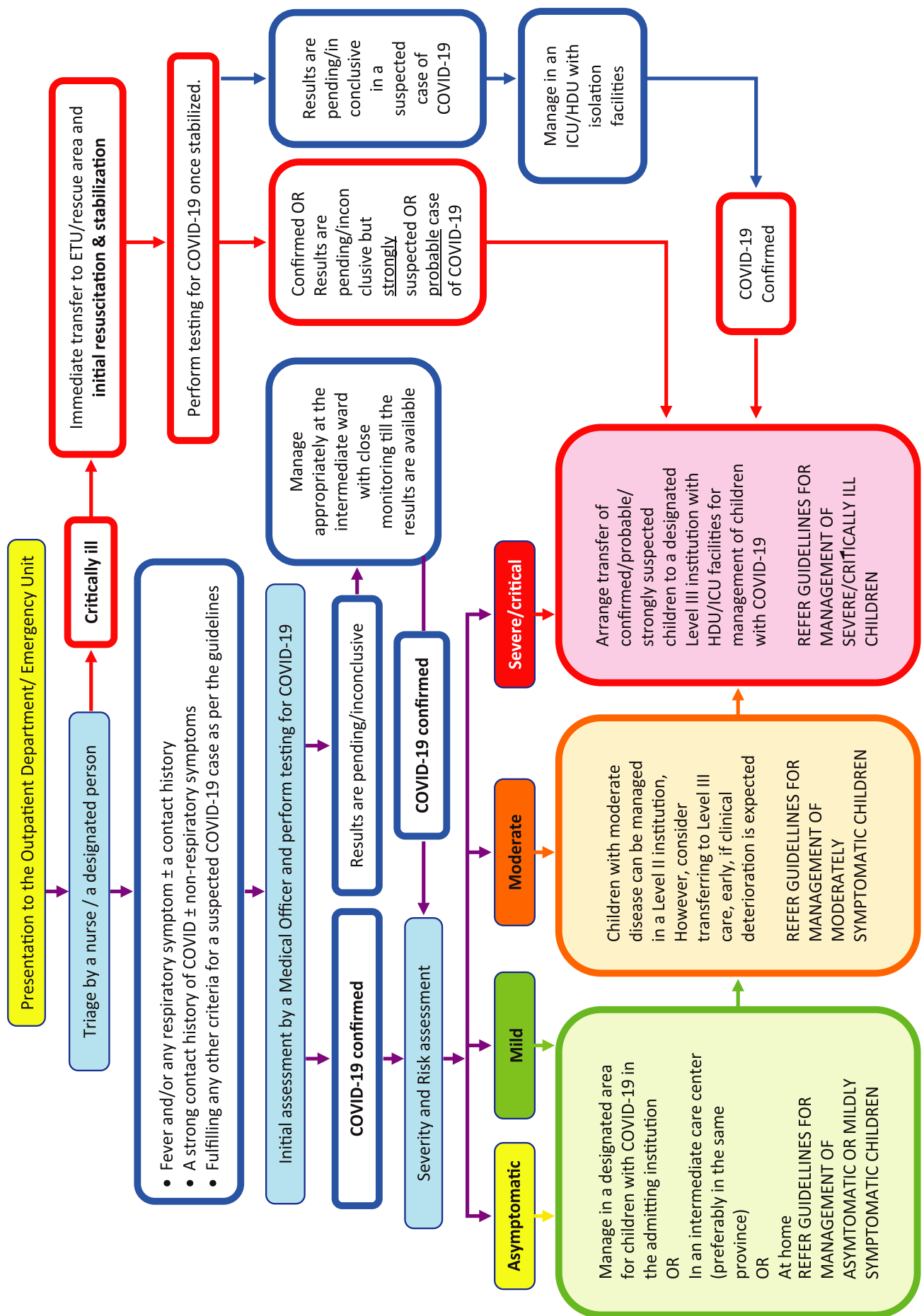
5. Children admitted for routine procedures and become positive on routine screening but asymptomatic could be discharged for home-based management. The decision for postponement of the investigation or procedure to be taken by the relevant surgical/medical team.
6. Child will be monitored for any new developments of symptoms during the isolation period
7. Following advice should be given to the parents/ caregivers
 - To record temperature, monitor for respiratory difficulties (oxygen saturation if available), feeding difficulties, urine output, sleepiness, or lethargy.
 - Parents/caregivers are advised to call the emergency contact numbers in case of serious concerns related the child's illness e.g., **1390 (Emergency call center) or 1990 (Ambulance), or Nearest hospital number or MOH/PHI**
 - Paracetamol 10-15mg/kg/dose for fever and antihistamine for nasal symptoms
 - Adequate rest, nutrition, hydration, and hygiene
 - Avoid NSAIDs, steroids and antibiotics unless advised by the medical team
 - If the child is on long-term medication, to continue those
8. The PHIMS team/paediatric team of the respective hospital will support the following aspects related to HBM of patients (Circular no: DGHS/COVID-19/347/2021)
 - Advice the parents/caregivers (information leaflet annexed)
 - Daily monitoring over the phone
 - Provide emergency contact details
9. The home isolated patient will be discharged on day-14 of the illness

The guidance and the checklists for initial assessment, information leaflet and daily monitoring are annexed. The remote assessment will be carried out via telephone as per the guided checklists.

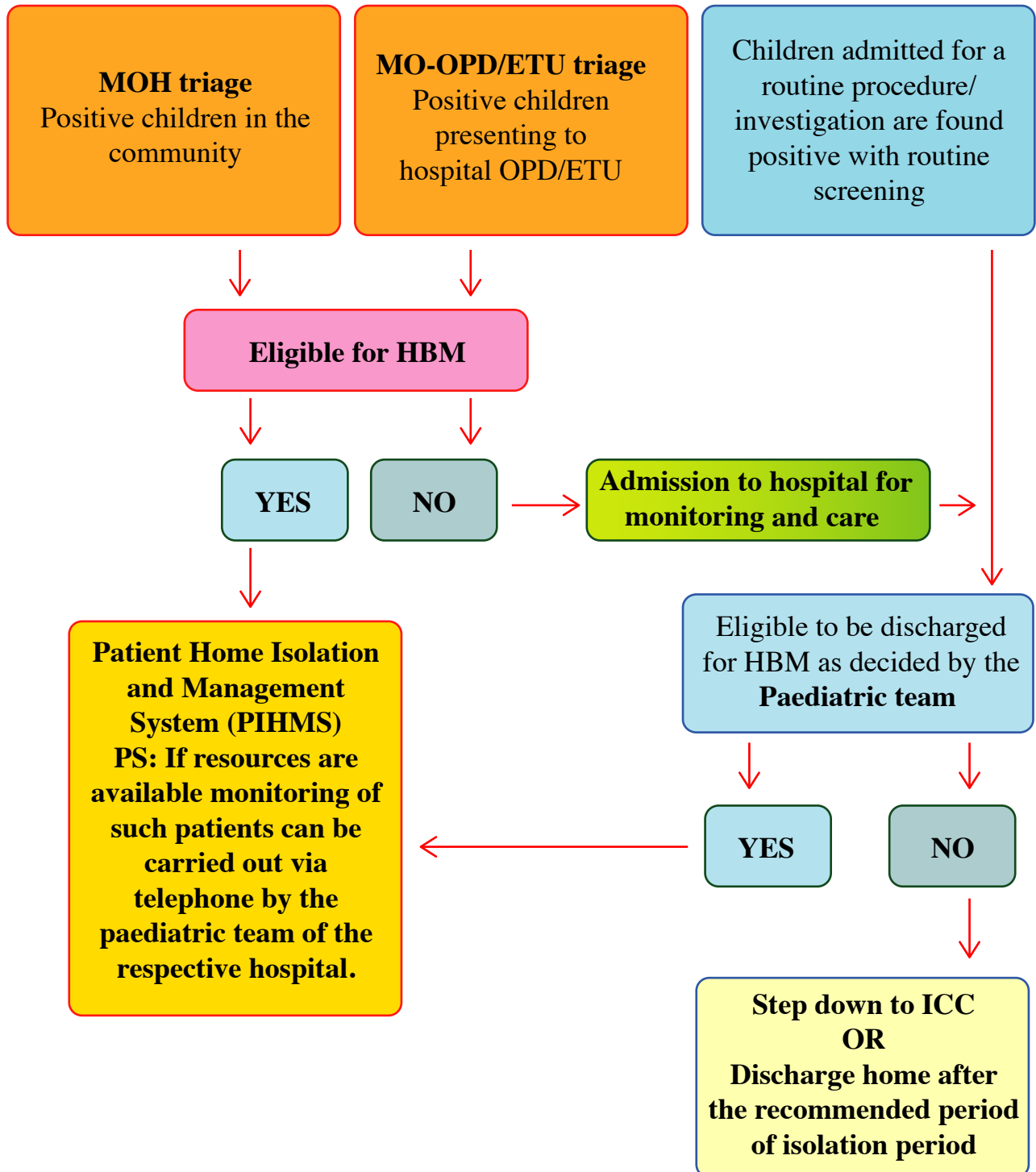
C. Assessment of neonates born to mothers with COVID-19 infection for home-based management

Refer the circular FHB/INBU/GOSL/COVID-19/2021 on discharge criteria of neonates born to mothers with COVID-19 infection

Approach to the management of children (< 14 years) with “suspected/probable/confirmed” COVID-19 infection at institutions



CARE PATHWAY FOR HOME BASED MANAGEMENT (HBM) OF CHILDREN LESS THAN 14 YEARS WITH LABORATORY-CONFIRMED COVID -19 INFECTION



SEVERITY BASED MANAGEMENT OF COVID-19 INFECTION

Confirmed case of COVID -19

Mild disease	Moderate disease	Severe disease	Critical disease
Fever, sore throat, rhinorrhea, cough and mild gastro-intestinal symptoms such as vomiting and diarrhoea. Home based (refer HBM guideline) / institutionalized management If institutionalized • Monitor RR, HR, SpO2 three times per day or more depending on the risks identified • Paracetamol • Antihistamines • Rest • Adequate nutrition and hydration No antibiotics or steroids Step up if worsening of symptoms or saturation at rest is <96% in room air or <94% in room air, after mild exertion or trend of oxygen saturation is worsening	Mild disease with high respiratory rate (based on the age group) OR Chest imaging suggestive of COVID-19 infection No evidence of severe pneumonia • Monitor RR, PR, BP, Respiratory effort, SpO2 four hourly or more • Oxygen if needed (target SpO2 >94%) • Supportive care • Antibiotics if evidence of secondary bacterial infection • Consider steroids if they start requiring oxygen, worsening symptoms, or prolonged duration of symptoms without evidence of recovery Step up if worsening of symptoms or CXR infiltrates	Moderate disease plus any of the following symptoms • SpO2 <90% in room air or worsening trend of SpO2 • Cyanosis • Grunting • Severe chest retractions • Increased respiratory efforts • Lethargy • Somnolence • Seizures • Haemodynamic instability • Radiographic infiltrates Preferably managed at a PICU • Monitor RR, PR, BP, Respiratory effort, SpO2 continuously • Oxygen (SpO2 target >94%) • Respiratory support as required (HHFOV/CPAP/ NIV) • Blood investigations and repeat CXR if indicated • Steroids: Preferably intravenous route in severe disease Dexamethasone 0.15mg/kg/day or equivalent dose of prednisolone or methylprednisolone or hydrocortisone • Antibiotics if indicated • Anticoagulation if established thrombosis • Continue supportive care • Monitor for complications	Acute respiratory distress syndrome (ARDS) Circulatory shock Multi organ dysfunction syndrome (MODS) Acute thrombosis Multisystem inflammatory syndrome in children (MIS-C) Manage at a PICU • Steroids and empirical antibiotics • Supportive care with fluid resuscitation and inotropes • Respiratory support • Manage Shock, ARDS, acute kidney injury, HLH, Myocarditis as per protocol • Refer management of MIS-C, page 11

08 CLINICAL DEFINITIONS AND MANAGEMENT OF LONG COVID

'Long COVID' is an emerging clinical entity of the current COVID -19 pandemic. Recovery time for symptoms of acute infection varies, but most patients recovered by 12 weeks. According to the current literature, the likelihood of developing 'long COVID' does not directly relate to the severity of the acute infection. Limited information on the paediatric population with 'long COVID' reveals the involvement of older children (median age of 12 years), with is a highly variable and wide range of symptoms. Fatigue, muscle and joint pain, headache, insomnia, respiratory problems, and palpitations were frequently reported like in adults.

NICE clinical definitions for acute to post covid syndrome

Acute COVID-19	Signs and symptoms of COVID-19 for up to 4 weeks
Ongoing symptomatic COVID-19	Signs and symptoms of COVID-19 from 4 to 12 weeks
Post-COVID-19 syndrome	signs and symptoms that develop during or after an infection consistent with COVID-19 continue for more than 12 weeks and are not explained by an alternative diagnosis

The common term of 'long COVID' describes both ongoing symptomatic and post covid -19 syndrome.

Common symptoms and signs of 'long COVID.'

Respiratory symptoms	Breathlessness, Cough
Cardiovascular symptoms	Chest tightness, Chest pain, Palpitations
Generalized symptoms	Fatigue, Fever, Pain
Neurological symptoms	Cognitive impairment ('brain fog,' loss of concentration or memory issues), Headache, Sleep disturbance, Peripheral neuropathy symptoms (pins and needles/numbness), Dizziness
Gastrointestinal symptoms	Abdominal pain, Nausea, Diarrhoea
Musculoskeletal symptoms	Joint pain, Muscle pain
Psychological/psychiatric Symptoms	Symptoms of anxiety
Ear, nose, and throat symptoms	Tinnitus, Earache, Sore throat, Dizziness, Loss of taste and/or smell
Dermatological	Skin rashes

Health care staff needs to suspect and refer to specialist care when children present with ongoing symptomatic COVID-19 or suspected post-COVID-19 syndrome, excluding alternative diagnoses, especially when they present with symptoms and signs of acute or life-threatening complications like breathlessness/hypoxemia or oxygen desaturation on exercise, signs of severe lung disease, chest pain and multisystem inflammatory syndrome in children.

Annexures :

Initial assessment by the MOH or MO-OPD/ETU for eligibility for home-based management of children with confirmed COVID-19			
Name:			
DOB:		Age:	
Sex:			
Address:			
Mobile/ contact number:			
MOH area:			
Hospital name:			
Ward		BHT:	
Date of RAT/PCR test			
If the answer is "Yes" to any of the following institutional management is recommended			
		Yes	No
Age	<2 years		
Family/ house hold or social conditions	Parent/care giver is not available all the time (24 X 7) with the child during the isolation period		
	Parent/caregiver cannot support and monitor the child		
	Ventilated room with adequate facilities for home isolation is not available		
	Adequate communication facilities are not available		
Underlying medical conditions	Chronic lung disease		
	Uncontrolled asthma		
	Chronic kidney or liver disease		
	Cerebrovascular disease		
	Obesity (BMI > 2SD)		
	Significant genetic/metabolic disease		
	Diabetes mellitus		
	Hemodynamically significant heart disease or hypertension		
	Primary immunodeficiency		
	Any form of acquired immunosuppression		
Evidence of moderate to severe disease	Tachypnoea (RR>40/min for 2-5 years, >30/min for above 5years) or difficulty in breathing		
	SpO2<96% in room air (if pulse oximetry available)		
	Fever > 48 hrs		
	Poor oral intake or irritable or sleepy		
	Or any other indicators of moderate to severe disease		

Assessment of hospitalized children for eligibility for home-based management			
Date:			
Name:			
DOB:		Age:	Gender:
Address:			
Mobile/ contact number:			
MOH area:			
Hospital name:			
Ward:		BHT:	
Date of sampling for RAT/PCR :			
If the answer is “Yes” to any of the following continue to manage in the institution			
		Yes	No
Family / household or social conditions	Parent/guardian is not willing for the home isolation and management		
	Parent/care giver not available all the time (24 X 7) with the child during the isolation period		
	Parent/care giver can not support and monitor the child		
	Ventilated room with adequate facilities for home isolation is no available		
	Adequate communication facilities are not available		
Children with co-morbid conditions who are at risk of severe COVID-19 infection	Needs further monitoring		
Evidence of moderate to severe disease	Tachypnoea (RR >40/min for 2-5 years, >30/min for above 5years) or difficulty in breathing		
	SpO2<96% in room air		
	Poor oral intake or irritable or sleepy		
	Any other indicators of moderate to severe disease		
Need to continue inward care	Presence of indications other than COVID-19		

Checklist for remote monitoring

Daily monitoring	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Fever $>38^{\circ}\text{C}$ or >3 days or recurring fever														
Significant abdominal pain														
Significant vomiting & diarrhea														
Poor feeding														
Urine output reduced significantly														
Sleepiness/irritability/poor activity														
Respiratory difficulty														
New uncontrolled cough														
Saturation $<96\%$ in air (if oximetry is available)														
Cold peripheries														
Worsening of symptoms														
Presence of mild symptoms (mild fever, cold, cough etc.) and absence of any red flag signs														
Asymptomatic														
<i>If any of the red flag signs (1-11) is answered "Yes", immediate institutional care is recommended</i>														

PARENTAL INFORMATION SHEET

How to look after your child with **COVID-19** infection at home

Hospital:

Emergency contact numbers

Paediatric unit: ext:

Hotline:

Name of the child:

Age: Sex: M/F Body weight:.....

Date of onset of symptoms: Date of RAT/PCR:

Date of completing home isolation:.....

How to look after your child at home	What are the warning signs?
• Strictly stay at home • Prevent spread among family members • Wear masks • Use hand sanitizer • Wash hands frequently • Child to be looked after by one person • Avoid sharing personal belongings • Frequent cleaning of house • Allow good ventilation & sun light • Balanced diet & good hygiene • Normal playing and activity (indoor) • Do not give any over the counter medicine • As a family think positive and be positive	• High fever/re-appearing fever • Less active, more sleepy • Markedly reduce feeding • Tummy pain which disturbs normal activity • Too frequent vomiting/diarrhoea • Less number of urine than previous • Cold peripheries • Worsening cough • Difficulty in breathing • High breathing rate/ Chest pain • Red eyes/lips • Fits • OR any other concern

Call: 1390 or closest government hospital
Rush to: Closest government hospital
Reach: by ambulance (1990)/ private vehicle



The following experts contributed to the development of guidelines

Prof. Shaman Rajindrajith: Professor of Paediatrics, Faculty of Medicine, University of Colombo

Dr Chithramalee de Silva – Director, Maternal & Child Health, Family Health Bureau

Dr Kapila Jayaratne - National Program Manager, Child Morbidity & Mortality, Family Health Bureau

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